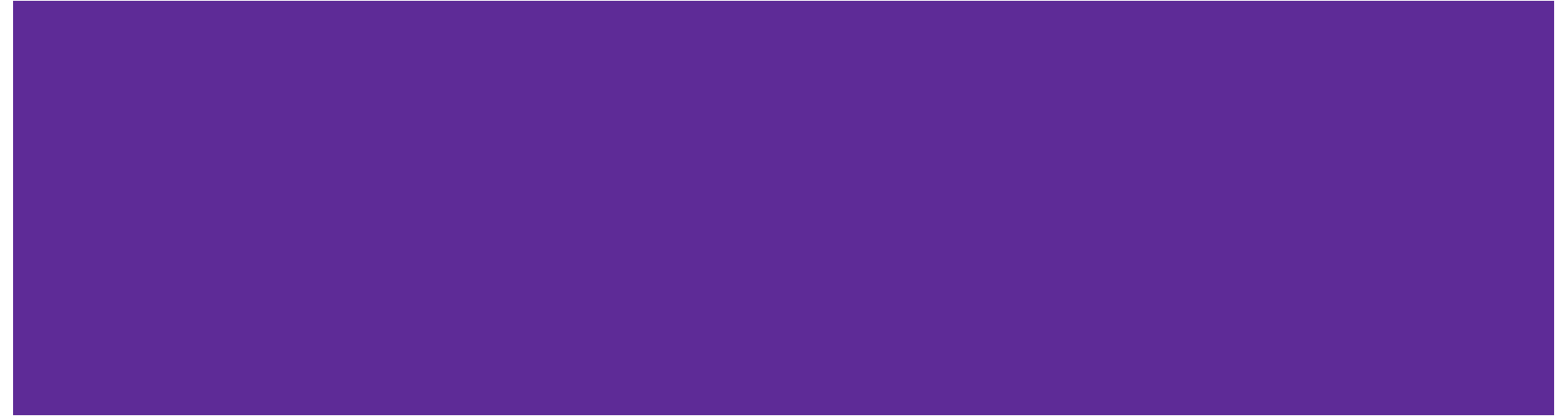


Making Meaning through Sorting and Classifying

2-25-2017



What are the benefits of sorting

- This is what our brains do naturally...Let's take advantage of it
- Notice and Wonder
- Which one doesn't belong?



$\frac{1}{2}$	$\frac{5}{3}$
$\frac{2}{10}$	$\frac{2}{5}$

Mathematics Teaching Practices - PtA

1. **Facilitate meaningful mathematical discourse** - Effective teaching of math facilitates discourse among students to build shared understanding of mathematical ideas by analyzing and comparing student approaches and arguments.
2. **Pose purposeful questions** - Effective teaching of math uses purposeful questions to assess and advance students' reasoning and sensemaking about important mathematical ideas and relationships.

- Principles to Action, NCTM

Math Practices

- SMP1 - Make sense of problems
- SMP2 - Reason abstractly
- SMP3 - Construct viable arguments

Connection to ELD

You teach this too!

Part I: Interacting in Meaningful Ways

- A. Collaborative (engagement in dialogue with others)
 - a. Exchanging information and ideas via oral communication and conversations
 - b. Interacting via written English (print and multimedia)
 - c. Offering opinions and negotiating with or persuading others
 - d. Adapting language choices to various contexts
-

Let's try one...

$13 - 12$	$21 - 25$	$3 + 15$	$-4 + 12$
$8 + (-14)$	$6 - (-3)$	$-7 + 9$	$-10 - 12$
$-8 + (-4)$	$5 + (-8)$	$12 - (-5)$	$-3 - 10$
$9 + (-12)$	$9 - 15$	$-7 + 13$	$0 - 12$

Guidelines for Implementation

Go slow

- Build the sort with the goal in mind
- Front load the objective but not a specific sort
- Leave the sort open ended at first
- Give students time to share in small groups and with the whole class
- Continue to refine the specific directions for successive sorts
- Ask students to make connections to the _____ objective/content goal

Fraction Sort

- Sort the cards into 2 or 3 categories - be prepared to explain your categories to your neighbor
- Sort the cards again by larger, equal, smaller dividend
- Sort cards by quotients greater than, equal to, or less than one.

Equation Sort

- Objective: To discover commonalities between types of equations
- Free Sort into 2 or 3 categories
- Sort into categories based on how you isolate the unknown
- Sort based on difficulty easy, medium, hard
- How else can we sort these?

Build a sort

Now let's build your own

- Pick a topic that you are teaching soon or have taught earlier this year
 - Determine the main understanding/objective for students
 - Anticipate student responses to free sort
 - Identify problems that allow for 3-5 possible sorts
-

You can always take it to writing...

- If you use math journals students can record their thinking
- Possible prompts
 - How did this sort help you understand _____ better?
 - What new understanding did you gain?
 - Compare the different types of _____?
 - Write a summary of your understanding about _____ so a student that wasn't here could understand your thinking.
 - What do you still want to know more information about and why?

Questions?

Thank you!!!

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